

Original Paper

Interlanguage as an Outcome of Bilingual Systems in Contact

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Abstract

Most previous studies of interlanguage regarded commonly observed learner errors as a universal or developmental phenomenon and related language transfer in second language learning to the developing interlanguage system itself. Though language transfer is often defined as one of the processes responsible for interlanguage, the relationship and interaction between the learner's first language and the target language is largely ignored. This study assumes that any interlanguage system is "composite" in nature because in second language learning several linguistic systems come into contact, and each contributes different amounts to the developing interlanguage system. It further assumes that the bilingual mental lexicon contains abstract elements called "lemmas" about individual lexemes, and lemmas in the bilingual mental lexicon are language-specific and are in contact in interlanguage production. Based on some research findings, this study concludes that language transfer or learner errors in interlanguage production should be understood as lemma transfer of the learner's first language abstract lexical structure; the developing interlanguage system is driven by an incompletely acquired abstract lexical structure of a target language item. This study treats interlanguage as an outcome of bilingual systems in contact at a rather abstract level to provide an explanatory account of second language acquisition.

Keywords

interlanguage, bilingual, mental lexicon, lemma, abstract lexical structure, language transfer, composite

1. Introduction

Most previous studies of Interlanguage (IL) (i.e., second language learners' developing linguistic system) focused on sources of Second Language (L2) learner errors or language transfer and related them to the nature and process of IL development. One of the weaknesses of such studies is that the relationship between learners' First Language (L1) and the Target Language (TL) and the relationship

between learners' IL and TL are largely ignored. Recent studies of language transfer have regarded cross-linguistic influence as an unavoidable and important part of IL development. Researchers adopting universal approaches have found reconciliatory solutions between the behaviorist and cognitive approaches (e.g., Selinker, 1972; Kellerman & Sharwood Smith, 1986; Færch & Kasper, 1987; Ringbom, 1987; Odlin, 1989; Dechert & Raupach, 1989; Gass & Selinker, 1983, 1992; Eubank, Selinker, & Sharwood Smith, 1995; Gass, 1996; Gass & Schachter, 1989; White, 1989, 1995; Bialystok, 1995; Yip, 1995; inter alia). For example, Gass and Selinker (1992) propose that it is not incompatible to regard second language acquisition (SLA) as being affected by learners' utilization of their L1 knowledge and other languages known to them (the view as advocated by Lado (1957)) and learners' build-up of a body of knowledge in which they test hypotheses formed on the basis of the available L2 data (the view as advocated by Dulay, Burt, and Krashen (1982)). Jake (1998), Fuller (1999), Myers-Scotton and Jake (2000), and Wei (2000a, 2009c) claim that there are at least three linguistic systems involved in SLA: learners' L1, their TL, and their developing IL.

To make IL studies explanatorily adequate, Wei (2015) raises the following questions:

- 1) If learners build up and revise their interim system by gradually increasing the complexity of the TL system, what is the origin of IL?
- 2) From the early stage of learning, is the TL always the "target" in projecting the sentential frame? If the TL is not sufficiently known to learners to project its frame, is there no frame at all?
- 3) Is there evidence that there is necessarily always a frame, and that learners first fall back on their L1 frame and then in some incremental way, move toward a TL frame? If yes, how does such a movement toward the TL frame begin, and what are the steps toward achieving the TL frame?

To explore the developmental nature of IL, this study adopts the Matrix Language Frame (MLF) Model (Myers-Scotton, 1993 [1997]; Myers-Scotton & Jake, 1995) and the Bilingual Lemma Activation (BLA) Model (Wei, 2002, 2006a, 2006b, 2009a, 2009b, 2009c, 2015). It assumes that the developing system of IL is "composite" because in SLA several linguistic systems are unavoidably in contact, and each may contribute different amounts to the developing system. It further assumes that that lexical structure is "abstract" because the mental lexicon contains abstract elements called "lemmas", which contain information about individual lexemes, and bilingual lemmas are language-specific and are also unavoidably in contact in IL production. Some selected research findings provide strong evidence in support of the conclusion that learner errors or language transfer should be understood as lemma transfer of learners' L1 abstract lexical structure; any IL construction should be viewed as an outcome caused by an incompletely acquired abstract lexical structure of a particular TL item.

2. Interlanguage as a Language-Contact Phenomenon

Studies of language-contact phenomena such as pidginization and creolization, primary language attrition, individual bilingualism, and CS contribute valuable observations and insights to the

understanding of SLA in general and the developing nature of IL in particular. The BLA Model claims that any IL system at any stage of L2 learning is an outcome of languages in contact.

Studies of pidginization and creolization offer empirical input to SLA studies. Andersen and Shirai (1996) find that the notion of L1 transfer itself is insufficient to explain learners' production of certain L2 morphemes for tense/aspect marking, such as overextension of progressive morpheme *-ing*, and they relate the processes of L2 learning to those of pidginization and creolization. They claim that an interaction between universal factors like markedness and prototype and L1 factors may come into play in L2 development. Such a type of interaction has been observed in various aspects of L2 learning, such as phonology (Eckman, 1977; Major, 1987), phonology and morphology (Hatch, 1983), morphology (Andersen, 1983a, 1983b; Wei, 1996b, 2000a, 2000b; Jake, 1998), syntax (Zobl, 1980a, 1980b; Gass, 1984), and semantics (Tanaka, 1983; Shirai, 1989).

Studies of primary language attrition provide evidence that primary language attrition shows its initial symptom when bilinguals start using mixed forms in situations that are not sociolinguistically appropriate and where the audience does not share or speak the same L2. Pfaff (1979), Kuhberg (1992), Seliger (1996), and Cook (2003) among others provide strong evidence that primary language attrition manifests itself in syntactic and morphological features as observed in L2, including calquing of language materials from L2 to L1. According to Seliger, "One source of change is the other grammar that exists in the mind of the bilingual, the grammar of the L2 and the other source is what remains of UG abilities" (1996, p. 617). As a result of primary language attrition, changes in the L1 grammar contain transfer from various linguistic elements in the L2, and those elements in the L2 which are more congruent with core universals will be more easily transferred than those which are not. Polinsky states that "The loss of grammatical system is non-random" and "Even significant language loss has a principled grammar of its own" (1997, p. 401). Myers-Scotton claims that "A language may be marked by extensive analogical leveling and substitutions, but here is always a clear morphosyntactic frame, even if a composite Matrix Language is its source" (2002, p. 185).

Studies of individual bilingualism posit that individual bilinguals can be located at various points along a proficiency continuum, depending on their current levels of proficiency in one of the languages. Dorian's observations (1981, p.15) reveal that effects of language contact on "healthy" languages, such as simplifications resulting in the elimination of one or more competing structures or the reanalysis of structures. Andersen (1982) finds that speakers of a language undergoing attrition tend to preserve and overuse syntactic constructions that reflect more transparent underlying semantic and syntactic relationships. Beniak, Mougén, and Valois (1984/1985) claim that in language contact situations, interference is the introduction of new forms or rules in one language under influence from another where they already exist and are in contact. Romaine holds that "Where languages are in contact, linguistic phenomena such as borrowing, interference and transfer will generally be found" (1989, p. 77). According to Romaine, the balance between languages in contact is not stable but may change over

time.

Studies of CS provide not only empirical evidence for structural constraints on mixed or switched codes but also a site for testing claims about IL development sequence. Directly relevant to IL studies is the distinction between the Matrix Language (ML) and the Embedded Language (EL) as identified in CS (Myers-Scotton, 1993 [1997]; Myers-Scotton & Jake, 1995). The MLF Model posits that ML and the EL play unequal roles in CS. As commonly observed in CS, the ML provides the morphosyntactic frame for CS, all syntactically relevant system morphemes and most content morphemes, but the EL only provides some content morphemes for certain semantic-pragmatic reasons.

The BLA Model views SLA as a language-contact phenomenon. Adopting the MLF Model, it claims that structural principles governing other language-contact phenomena, such as CS, also govern IL at a rather abstract level. Though IL is not the same as classic CS in terms of a clear distinction between the ML and the EL, IL contains abstract elements from two or more language systems, such as lemmas of abstract lexical structure, types of morphemes, and grammatical structures. It is in this sense that IL is regarded as an outcome of bilingual systems in contact.

3. Composite Nature of Interlanguage

The central argument of the MLF Model is that in all language contact situations, such as pidgins, creoles, and CS, there must be an ML which projects a grammatical frame to structure the surface constituents. IL should be no exception if it is also regarded as a language-contact phenomenon. Different from other language-contact phenomena, in SLA, the incompletely acquired TL cannot be the ML which projects the grammatical frame for IL utterances. This is because IL utterances are not fully composed of TL linguistic material and also because L2 learners do not have full access to the TL along the IL continuum. The L1 cannot be the ML either because L2 learners know it is not their intended or “targeted” language. Thus, there may be several linguistic systems involved in IL, such as learners’ L1, their developing learner variety (i.e., the current status of their IL), and the TL (Selinker, 1972; Eubank, Selinker, & Sharwood Smith, 1995). However, as noted in much recent research (cf. Gass & Selinker, 1983; Flynn, 1987; Gass & Schachter, 1989; White, 1989, 1995; Bialystok, 1995; Yip, 1995), this observation by itself remains descriptive. To develop an explanatory account of the developmental structure of IL, Jake (1998), Fuller (1999), Myers-Scotton and Jake (2000), and Wei (2000a, 2009c) claim that IL is a composite linguistic system as an outcome of bilingual systems in contact.

To explore the possible connections between IL and CS in terms of the notions of an ML and abstract lexical structure, Fuller (1999) analyzed two corpora: an IL corpus having English as the TL and the speakers’ two L1s (Spanish and German), and a German-English CS corpus. The comparison of these two corpora reveals some similar lexical and grammatical patterns in both types of bilingual speech production. Fuller’s analysis assumes that IL is a composite of features from the speakers’ L1(s) and TL, the combination of which is governed by the similar principles as proposed in the MLF Model. What

becomes important is her claim that like CS, IL is also framed by an ML, but the ML of IL is a composite because abstract categories and grammatical rules from learners' L1 remain active in L2 learning. In Fuller's study, L1 transfer is reviewed as the consequence of complex lexical structure, which may be split and recombined to construct IL. Of course, IL data consist of morphemes only from the TL, and thus the focus of IL studies should be on the interaction between grammars at levels of abstract lexical structure.

Some recent researchers have made several important theoretical assumptions about the composite nature of the developing system of IL:

1) Jake (1998), Myers-Scotton (1998), Fuller (1999), and Wei (2009c) claim assume that the early IL system is a composite developing system because at different times different linguistic systems, such as learners' L1, the developing IL and the TL, are in contact, and each contributes different amounts to the developing system of IL.

2) Levelt (1989), Bock and Levelt (1994), and Wei (2002) assume that the mental lexicon contains abstract entries (i.e., lemmas), which are pieces of information about particular lexemes, and the bilingual mental lexicon contains language-specific lemmas, which are in contact in IL production. Abstract lexical structure contains several discrete but interacting subsystems including lexical-conceptual structure, predicate-argument structure, and morphological realization patterns (Chomsky, 1981; Jackendoff, 1990; Talmy, 1985), and such an abstract lexical structure in IL may have different sources, such as those from learners' L1 and/or the TL.

3) Myers-Scotton (1993 [1997], 1998) assumes that abstract lexical structure is modular and can be split and recombined in novel yet constrained ways in constructing the linguistic system underlying IL, and parts of the abstract lexical structure from learners' L1 lexical entries may influence the abstract lexical structure of incompletely acquired TL lexical entries in the developing IL.

4) Wei (2000a, 2003) assumes that, as commonly observed, learners may fall back on their L1 strategies so as to map surface form onto functions in the TL. Their increasing familiarity with appropriate TL morphosyntactic structures will lead to a gradual fading of initially useful but inappropriate word choice or ill-formed sentences. As predicted, the TL will gradually become dominant in learners' IL system.

Following the above lines of thinking, this study explores the nature and activity of the bilingual mental lexicon in IL development under the assumption that in SLA several linguistic systems are in contact, and each may contribute different amounts to the developing system of IL. It provides evidence from adult L2 learning in support of the assumption that lexical structure is "abstract" because the mental lexicon contains abstract elements called "lemmas", which contain information about individual lexemes, and lemmas in the bilingual mental lexicon are language-specific and are in contact in IL production. This study regards language transfer in IL production as lemma transfer of learners' L1 lexical structure at three abstract levels: lexical-conceptual structure, predicate-argument structure, and

morphological realization patterns. The crucial argument underling this study is that IL construction is driven by an incompletely acquired abstract lexical structure of a TL item and treating IL as an outcome of bilingual systems in contact will result in an explanatory account of SLA.

4. Matrix Language of Interlanguage

The central argument of the MLF Model is that in all language contact situations, there must be an ML to project a grammatical frame for structuring the surface constituents (Myers-Scotton, 1993 [1997]). IL involves several linguistic systems in contact, and it must also have an ML. However, along the IL continuum (i.e., during the process of SLA), the incompletely acquired TL cannot be the “perfect” ML to project the grammatical frame for IL utterances. This is because, as commonly observed, IL utterances are not fully composed of TL-based linguistic material and/or morphosyntactic patterns. In addition, the TL cannot be the ML because it is not completely available to L2 learners. Furthermore, the L1 cannot be the ML because, sociopsycholinguistically speaking, L2 learners are fully aware their L1 is not their intended or targeted language in SLA. This study makes the strong assumption that the ML of IL is a composite of the *de facto* ML (i.e., a mix of the L1 and the IL) and the intended ML (i.e., the TL). Like other language contact phenomena, learners’ L1 is identified as the EL, but different from other language contact phenomena, this EL may influence the *de facto* ML and they may partially contribute L1 abstract lexical structure to IL utterances. Jake (1989), Fuller (1999), and Wei (2000a, 2009c) assume that the composite nature of the ML is caused by different constraints on the roles of the linguistic systems in contact in the IL developing system, with the TL as the “preferred” ML because it is always learners’ “targeted” language and the L1 as an “unfavorable” but “unavoidable” EL because it may play an interfering role in the process of IL development. Thus, if the ML of IL is defined as a composite of the *de facto* ML and the intended ML, IL can be defined as a composite developing linguistic system.

What is crucial to the concept of a composite ML and to the concept of the contributing EL is the abstract lexical structure which becomes complex in IL on the following assumptions:

1) The mental lexicon does not simply contain lexemes (i.e., the fundamental unit of the lexicon of a language) and their semantic content but more abstract elements called “lemmas” (Levelt, 1989; Myers-Scotton & Jake, 1995; Wei, 2001b, 2002). Lemmas are defined as abstract entries in the mental lexicon that support the surface realization of actual lexemes. That is, for each lexical item, the mental lexicon contains its lemma information about the word’s lexical content ((i.e., semantics). For example, the lemma for *put* requires a subject that carries the thematic role of AGENT, and object that carries the thematic role of THEME, and a prepositional object that carries the thematic role of LOCATION (e.g., *Mary put the flowers on the table*). That is, each thematic role assigned to the relevant noun must be available in order for the verb to be meaningful. Lemmas also contain information about the word’s syntactic environment (i.e., morphosyntax). For example, the lemma for *he* requires the word to be

used as a male subject and that any following present-tense main verb must be inflected with -s for the subject-verb agreement. In addition, lemmas contain information about the word's phonological structure, syllabic composition, and accent structure. Furthermore, lemmas may contain information about the word's register, the kind of discourse in which it typically appears, and its pragmatic function. It is in this sense that the mental lexicon is defined as the speaker's "internal" representation of knowledge (i.e., lemmas) about the surface forms. The crucial assumption underlying the BLA Model is that lemmas are language-specific, and language-specific lemmas in the bilingual mental lexicon are in contact in IL production (Wei, 2000a, 2000b, 2002).

2) IL is a developing linguistic system and, like any other linguistic system, has its abstract lexical structure, which contains several discrete but interacting subsystems: lexical-conceptual structure (i.e., semantic and pragmatic information), predicate-argument structure (i.e., subcategories of verbs and their grammatical encoding), and morphological realization patterns (surface devices for word order, case assignment, agreement, tense/aspect marking, etc.) (de Bot & Schreuder, 1993; Jake, 1994; Myers-Scotton & Jake, 1995; Wei, 2002). The BLA Model assumes that such an abstract lexical structure in IL has different sources and claims that it is the sources of IL abstract lexical structure which drive IL constructions. Wei (1996b, 2000a, 2000b, 2002) provides evidence that IL is always the learner language which shows the surface forms of the intended TL, but it also contains abstract lexical structures from both the L1 and the TL.

3) Abstract lexical structure is assumed to be modular and can be split and recombined in novel, yet constrained ways in construction the linguistic system of IL (Jake, 1998). The BLA Model proposes that because the abstract lexical structure in IL has different sources, parts of the abstract lexical structure from learners' L1 lexical entries may influence the abstract lexical structure of incompletely acquired TL lexical entries. Wei (2002, 2015) provides evidence that each of the three subsystems of the abstract lexical structure in IL contains elements from learners' L1 and/or the TL, and learners' L1 may contribute different amounts of its abstract lexical structure to the TL along the IL continuum. It is in this sense that the developing linguistic system of IL is regarded as a composite.

The BLA Model claims that language transfer or L1 influence in L2 learning are mainly caused by the composite nature of IL as a developing linguistic system and the complete acquisition of the TL abstract lexical structure is the determinant factor in successful SLA. As commonly recognized, IL is an incremental and transitional linguistic system, and it must be governed by some underlying structural principles. Jake (1998) proposes two such principles:

"The target-language principle: To the extent possible, construct the IL from the TL lexical structure" (Jake, 1998, p. 341). This principle predicts that "All IL surface structures are projected by TL-based lexical items in the grammatical system underlying IL" (Jake, 1998, p. 342). This stipulates that the real or putative TL abstract lexical structure underlying all IL lexical items can be identified, and language transfer or L1 influence becomes limited to the extent of L1 congruence with the TL abstract lexical

structure. That is, language transfer or L1 influence must be sufficiently target-like so as to contribute to the abstract lexical structure of the composite ML of IL. In other words, all language transfer or L1 influence must be TL-based or TL-orientated (cf. Kellerman, 1986; Giacobbe, 1992; Jake, 1998; Fuller, 1999; Wei, 2000a, 2000b).

“The complete-projection principle: To the extent possible, satisfy the requirements of the grammar of the matrix language through the specification of all requisite grammatical features of the entries in the mental lexicon (i.e., lemmas)” (Jake, 1998, p. 342). This principle stipulates that learners will attempt to fill all levels of abstract lexical structure in IL based on their knowledge of the TL, which requires that abstract entries in the mental lexicon (i.e., lemmas) must be completely specified as possible (Levelt, 1989) in order to project lexical properties onto syntax. It is this principle that “drives the development of a grammatical system underlying the composite matrix language of IL” (Jake, 1998, p. 342). The complete projection of the TL grammatical requirements “through the specification of all required grammatical features of the entries in the mental lexicon (i.e., lemmas)” (Jake, 1998, p. 342) can be achieved only incompletely or incrementally by L2 learners. This predicts that IL structures in different stages of learning may reflect incomplete acquisition of certain TL structures and may contain certain linguistic features of both learners’ L1 and the TL.

The BLA Model claims that abstract lexical entries in the bilingual mental lexicon are language-specific and they must be learned as such (Wei, 2000a, 2000b, 2002). Accordingly, this model identifies three sources of abstract lexical structure in the bilingual mental lexicon in relation to the composite nature of the IL developing system:

- 1) The bilingual mental lexicon contains language-specific lemmas about particular lexemes. Language-specific lemmas (i.e., bilingual lemmas) are in contact during IL production.
- 2) Abstract lexical structure contains three discrete but interacting subsystems: lexical-conceptual structure, predicate-argument structure, and morphological realization patterns. Each subsystem deals with a particular component of grammar. However, such an abstract lexical structure in the bilingual mental lexicon have different sources at different stages of IL development.
- 3) Parts of the abstract lexical structure from learners’ L1 lexical entries (i.e., lemmas) may influence the abstract lexical structure of incompletely acquired TL lexical entries in IL production, resulting in language transfer or, to be more specific, lemma transfer.

The abstract and complex lexical structure in the bilingual mental lexicon and the composite nature of the IL developing system have three important implications for the ML of IL.

- 1) Languages involved in any language-contact situations do not play equal roles in structuring constituents containing elements from both languages, there is always a clearly identified ML in a language-contact setting, and the grammatical frame projected by the ML is always complete. However, the ML of IL is a composite because it contains elements of the abstract lexical structure from learners’ L1 and the TL, resulting in learners’ current IL construction.

2) IL construction is necessarily projected by the lexical structure of the ML. However, the ML of IL is incomplete because it lacks certain aspects of the lexical structure of the TL. Consequently, learners may turn back on their L1 lexical structure and/or their partially acquired TL lexical structure in place of the intended ML in order to form IL constituents.

3) Language transfer or L1 influence should be understood as transfer of abstract lexical structure at several levels from L1 morphemes. Such a transfer becomes necessary for learners to fill particular gaps in their incompletely acquired TL lexical items.

5. Abstract Lexical Structure in Interlanguage

As introduced above, the BLA Model regards the developing linguistic system of IL as an outcome of bilingual systems in contact and claims that the ML of IL is a composite because its abstract lexical structure contains lemmas underlying particular lexical items in different languages, such as learners' L1 and TL. The nature and function of the composite ML of IL in SLA can be explored in terms of some observable consequences of bilingual lemmas in contact at three levels of abstract lexical structure: lexical-conceptual structure, predicate-argument structure, and morphological realization patterns. Accordingly, sources of language transfer or L1 influence in L2 learning can be better described and explained.

5.1 L1 Lexical-Conceptual Structure in the Composite ML of IL

Pavlenko proposes the Modified Hierarchical (MH) Model to explore cross-linguistic differences in the level of conceptual representation in the bilingual mental lexicon. The MH Model assumes that bilingual "conceptual representations may be fully shared, partially overlapping or fully language-specific" (Pavlenko, 2009, p. 146). This assumption recognizes language-specific lexical concepts, which has important implications for not only theories of bilingual processing but also the nature and activity of the bilingual mental lexicon in language transfer. As observed by Jiang (2000), Jarvis (2003, 2009), Barsalou (2003), Malt, Sloman and Gennari (2003), Stepanova Sachs and Coley (2006), Wei (2015), and Wei and Liu (2017), the same bilingual speakers may perform some tasks under language-specific constraints and display certain language transfer.

The MH Model further assumes that language-specific lexical concepts (i.e., semantic representation) may cause conceptual transfer. This assumption "allows researchers to differentiate between errors made at the level of linking (semantic transfer) and those that involve the structure of conceptual categories (conceptual transfer)" (Pavlenko, 2009, p. 148).

Pavlenko cites two examples to illustrate such a difference. One example is that a Finnish speaker of English as an L2 say *He bit himself in the language* instead of "He bit himself in the tongue" (Ringbom, 2001, p. 64). It seems that the speaker transfers the Finnish word *kieli*, a polysemic word meaning both *tongue* (a part of a human body) and *language* (a means of communication); to the English word *language* (the means of communication only). This error is recognized as "semantic transfer" because it

is an issue of mapping words to concepts rather than the structure of conceptual categories. The other example is that an English speaker of Russian as an L2 asking for a paper drinking container uses the Russian word *chashika* (similar to the English word *cup*), which does not refer to plastic or paper containers. This error is recognized as “conceptual transfer” because such a transfer is not simply an inappropriate semantic link but the speaker’s inadequate knowledge of the concept of *chashika*. The MH Model relates the nature of the bilingual mental lexicon to implications of distinct conceptual equivalence relationships to L2 vocabulary learning.

Along these lines of thinking, the BLA Model adopts a more general term *lexical-conceptual structure* to include bilinguals’ lexical vs. conceptual representations as revealed in language transfer or L1 influence. Beyond these lines of thinking, the BLA Model explores sources of language transfer in terms of the nature and activity of the bilingual mental lexicon in general and bilingual’s abstract and complex lexical structure in particular.

The conceptual structure may not be language-specific (Levelt, 1989; Bierwisch & Schreuder, 1992), but languages may lexicalize the components of a given conceptual structure in different ways (Talmy, 1985; Jackendoff, 1991; Levin & Pinker, 1991). As evidenced in SLA research, the lexical-conceptual structure of an IL lexical item may contain lemmas underlying an L1 counterpart (i.e., L1 semantic/pragmatic features). This is because at a certain stage of learning learners’ L2 lexicon is partial or incomplete (i.e., IL lexicon). As commonly observed, learners may turn to similar or equivalent lexical items in their L1 in their IL production when their incompletely acquired L2 lexical items do not allow them to express their intended meanings (Talmy, 1985; Choi & Bowerman, 1991; Wei, 1995; Dewaele, 1998; Jake, 1998; Fuller, 1999; Jiang, 2000). The BLA Model (Wei, 2002) emphasizes that lemmas for particular lexemes are language-specific in the bilingual mental lexicon, and such language-specific lemmas can be activated in IL production, resulting in language transfer or L1 influence. Below are some typical instances of language transfer as assumed to be caused by L1 lexical-conceptual structure in the composite ML of IL.

[1] She now do meal.

[2] Open air condition.

[3] You close light.

[4] You come my house?

(Chinese L1; Wei, 1995)

[5] There have English class, free. You go?

(Chinese L1; Wei, 1996a, p. 423)

[6] a. In the late of Maracaibo was discovered the oil.

b. I have mentioned that in my country does not appear to exist any constraint on a woman’s right

to choose a husband

c. And then at last comes the great day.

(Spanish L1; Rutherford, 1989, p. 178)

[7] He is funny. His words in class laugh me.

(Japanese L1; Wei, 1995)

[8] I study English for work in Japan. My parent want do me teacher...teach English in Japan.

[9] Yesterday in library I look Japanese magazine.

(Japanese L1; Wei, 1996a, p. 423)

In [1], *do* means “cook”, and it also means “play, work, write” in the L1. In [2], *open* means “turn on”, and it also means “start” or “begin” in the L1. In [3], *close* means “turn off”, and it also means “stop” or “shut” in the L1. In [4], *house* also means “apartment”, “building”, or “home” in the L1. In [5], *have* means both “possess” or “exist” in the L1. In [6], a discourse-pragmatic feature projects the verb-subject order as a structure to focus new information in tertian kinds of grammatical structure in the L1. It seems that the learner has not acquired a particular lexeme *there*, and the structure it introduces (i.e., the NP is introduced by a nonthematic pronoun in an existential “there” construction. In this instance, the “gap” between the L1 and the TL is not only semantic/pragmatic but also syntactic. In [7], the causative lexical-conceptual structure incorrectly extends the semantic feature of “cause”, where the “causee” is *me* (the PATIENT), which should be “I” (the AGENT), as thematically realized in the TL, and *his words*, the “causer”, should be a PP stimulus (laugh “at this words”) as thematically realized in the TL. In [8], *do* means “make”, and it also means “try”, “act” or “play” in the L1. In [9], *look* means “read”, and it also means “see”, “look at”, “visit” or “observe” in the L1.

Such instances of language transfer at an abstract level reveal that although learners use the TL lexical items, the selection of those items may be caused by their incomplete knowledge of the TL lexical-conceptual structure of particular lexemes. In other words, language-specific lemmas for the universal concepts based on learners’ L1 may activate or retrieve the TL lexical items inappropriately, resulting in L1 lexical-conceptual structure in the composite ML of IL. According to Pavlenko (1997, 2003, 2009) and Pavlenko and Driagina (2007), “conceptual restructuring” requires learners to readjust the lexical category structure and boundaries in accordance with the constraints of the TL category, and “conceptual development” requires learners to develop lexical representations similar to those of native speakers of the TL. According to the BLA Model, it is the activation of the lemmas underlying certain particular L1 lexical items which causes lexical-conceptual transfer in IL production. Thus, the BLA Model regards language transfer as L1 lemma transfer. As assumed, parts of lexical structure can be split and recombined in the developing IL (Jake, 1998). The BLA Model predicts that along the IL

continuum, learners will acquire more and more knowledge of the TL lexical-conceptual structure of particular lexemes.

5.2 L1 Predicate-Argument Structure in the Composite ML of IL

Because of their incomplete knowledge of certain TL lexical items, learners may choose the right TL verbs but may not know the predicate-argument structure as required by those verbs. Consequently, they may use certain TL verbs inappropriately in IL production (Wei, 1996a, 1996b, 2009c), resulting in L1 predicate-argument structure in the ML of IL (i.e., the projection of the number of arguments as required and the thematic roles assigned to each of the arguments as their counterparts in the L1). Also, incompletely acquired TL lexical-conceptual structure may map onto incompletely acquired TL predicate-argument structure, one inducing the other. As observed in [7], the resulting causative lexical-conceptual structure affects the predicate-argument structure and morphological realization patterns. Below are some typical instances of L1 predicate-argument structure in the composite ML of IL as observed in early-stage IL production.

[10] Today he help dinner.

[11] She cost me hundred dollar,...bad tooth.

[12] Yes...teacher report parent grade.

(Chinese L1; Wei, 1996a, p. 422)

[13] Please help me look my child.

[14] You're listening music?

(Chinese L1; Wei, 1995)

[15] Wait. I first fill water in glass. Wait.

[16] He busy. He not help my homework.

[17] Parent provide money to me.

(Japanese L1; Wei, 1996a, p. 422)

[18] I can wait you here.

[19] Why you ask many questions for me?

(Japanese L1; Wei, 1995)

In [10], as allowed in Chinese, *help* assigns the THEME directly to the object without the preposition “with” as required in the TL. In [11], as allowed in Chinese, *cost* takes the AGENT (the person who spends the money) as the subject, rather than the THEME (the thing on which the money is spent). In [12], as allowed in Chinese, *report* assigns the GOAL directly to *parent* without the preposition “to” as

required in the TL. It should also be noted that in English, verbs like “report” cannot be used in the double-object dative construction (“the teacher reports the students’ grades to their parents”, but not “the teacher reports their parents the students’ grades”). This reveals how an incompletely acquired predicate-argument structure affects the morphological realization patterns in the TL. In [13], the preposition “after” does not appear to introduce the THEME *my child*, since the Chinese counterpart verb “zhaoliao” does not need a preposition to introduce the THEME. In [14], the THEME *music* is the internal object of the verb *listen*, without being introduced by the preposition “to” as required in the TL, since the Chinese counterpart verb “ting” does not need a preposition to introduce the THEME.

As observed, Japanese learners of English may also transfer their L1 predicate-argument structure to their IL production of certain TL verbs. In [15], *fill* assigns the THEME to *water*, rather than assigning the PATIENT to *glass* and introducing the THEME by the preposition “with”, and *glass* is assigned the LOCATION by the preposition “in”, rather than the PATIENT as required in the TL. In [16], the preposition “with” as required in the TL does not appear to introduce the THEME, since in Japanese the verb *help* itself can assign the thematic role directly to the object. In [17], *provide* assigns the THEME (money), rather than the RECIPIENT, to the object, violating the TL predicate-argument structure where the THEME is introduced by the preposition “with”. In [18], the THEME *you* is introduced directly by *wait* without the preposition “for” as required in the TL, since the Japanese counterpart verb “matsu” can take its internal object. In [19], the GOAL *me* is introduced in a prepositional phrase, structurally subordinate to the verb internal object *many questions*, the THEME. This predicate-argument structure reflects the Japanese counterpart verb “suru” (“ask”) which projects the GOAL as a postpositional object with the postposition “ni”.

As commonly observed, in early stages of IL development, learners may transfer their L1 predicate-argument structure to the composite ML of IL. It should also be noted that though learners’ “target” is always and should be the L2 lexical structure, the ML of their IL developing system is predictably a composite of structures from multiple sources. Thus, in addition to other levels of abstract lexical structure, the projection of L1 predicate-argument structure makes the ML of IL a composite.

5.3 L1 Morphological Realization Patterns in the Composite ML of IL

Another level of abstract lexical structure is recognized as morphological realization patterns which deal with surface devices (such as auxiliary system and inflectional morphology) for word order, case, agreement, tense/aspect marking, etc. at the position level of language production. Like L1 lexical-conceptual structure and L1 predicate-argument structure, L1 morphological realization patterns in the composite ML of IL may frequently appear in learners’ early-stage IL production (Aaronson & Ferres, 1987; Long, 1997). Below are some typical instances of L1 morphological realization patterns in the composite ML of IL as observed in early-stage IL production.

[20] I English not speak.

[21] ...because I study English, just more study English.

[22] My husband in USC study.

(Chinese L1; Wei, 1995)

[23] Outside cold, inside warm.

[24] Hello...she not in home. She at outside at playground playing. You come? You not come?

I tell her. Bye.

[25] Go swim? No. Parent no go, you no go swim.

[26] You go too? We have three ticket.

[27] You not go library, I go.

[28] Tomorrow I no go work. I sick.

(Chinese L1; Wei, 1996a, p. 421)

[29] In Japan student English junior high school start.

[30] I in Japan my city like.

(Japanese L1; Wei, 1995)

[31] I from Japan arrive, now live in room...apartment, I, friend and EPI teacher. EPI teacher

help me English speak...kind, nice teacher.

[32] Speak English difficult. I English...speak not well.

[33] Here everything expensive. I everyday use bike. Taxi? No. I live not far.

[34] I go to party with friend tomorrow. We together cook, interesting.

(Japanese L1; Wei, 1996a, p. 421)

The Chinese basic word order is Subject -Verb-Object, but any constituent or lexical item can be placed before Verb or in the sentence initial position for topicalization or emphasis. Among other things, early-stage Chinese learners of English use simple L2 content morphemes (such as nouns, verbs, adjectives, adverbs, and certain prepositions) to express their intended meanings, but they employ their L1 word order (i.e., morpheme order) (Givón, 1984; Talmy, 1985; Wei, 1995, 1996a; Jake, 1998; Fuller, 1999). In [20] the direct object *English* is placed before the verb. In [21], *more* is placed before the verb phrase *study English*. In [22], the prepositional phrase of location *in USC* is placed between the subject and the verb. It should be noted that, as long as the speech context allows, any constituent or element, such as the copula, the AGENT or the THEME can be left out, as shown in [23], [24] and [25]. Since Chinese has few auxiliary verbs and no inflectional morphology (i.e., system morphemes) for 3rd person singular, plural, and tense/aspect marking, grammatical concepts, such as tense and aspect are

not morphologically realized but implicitly expressed, as shown in [24], [25], [26] and [27], or realized by other means, such as adverbials of time, as shown in [28]; negation is realized by placing the negative particle (“not”/ “no”) immediately before the verb (i.e., no auxiliary is available for the grammatical purpose in Chinese), as shown in [20], [24], [25], [27] and [28]; “interrogative” is realized by the rising intonation, as shown in [24], [25] and [26]; and “plural” is realized by specific cardinal numbers, as shown in [26]. Such instances of language transfer or learner errors show that learners try to use TL content morphemes to express their intended meanings, but their IL production is structured by a composite ML which largely contains the morphological realization patterns from their L1 (Wei, 1996a, 1996b, 2000a).

Similar instances of L1 morphological realization patterns in the composite ML of IL are also observed in early-stage Japanese learners of English. It seems obvious that these learners put the TL content morphemes in the Japanese basic Subject-Object-Verb word order, as shown in [29], [30], [31] and [32], where any constituent or lexical item is placed before the verb; negation is realized by placing the negative element after the verb, as shown in [32] and [33]. It should also be noted that in Japanese morphological realization patterns, there is lack of auxiliary verbs for negation, tense/aspect realization, etc. and other grammatical morphemes (i.e., system morphemes) as required in the TL, such as certain determiners as in [33] and [34], 3rd person singular as in [31], and plural as in [34]. Consequently, like early-stage Chinese learners of English, early-stage Japanese learners of English tend to produce “bare forms” of TL content morphemes, which are inserted into L1-based IL frames or frames not found in the TL (Wei, 1996b; Jake, 1998).

The BLA Model assumes that lemmas in the bilingual mental lexicon are language-specific and are in contact in the projection of actually occurring IL surface forms. Like L1 lexical-conceptual structure and L1 predicate-argument structure, L1 morphological realization patterns may be employed by early-stage learners to fill a “gap” in the lexical structures projected by the incompletely acquired ML of the TL. The BLA Model strongly claims that language transfer at any level of abstract lexical structure in IL development is the consequence of language-specific lemma transfer.

6. Conclusion

This study regards IL as an outcome of bilingual systems in contact on the assumption that there are at least three linguistic systems in contact in SLA: the L1, the TL, and the developing IL, each playing its role in IL development. As the MLF Model claims, there must be an ML in any language-contact situation. It is the ML which controls three levels of abstract lexical structure: lexical-conceptual structure, predicate-argument structure, and morphological realization patterns. Such an ML is very special in IL because two linguistic systems are ML candidates: The TL is learners’ “intended ML”, and the abstract grammatical system underlying the developing IL is the “*de facto* ML” (Jake, 1998, p. 362). As observed in any SLA research, during the process of L2 learning, learners’ knowledge of the TL is

insufficient, and thus the intended ML is predictably incomplete. It is for this reason that the *de facto* ML containing elements of abstract lexical structure from other sources must come into play in IL production. It is the L1 abstract lexical structure and/or the generalized TL abstract lexical structure which fill gaps in the *de facto* ML (Jake, 1998, p. 362). It is in this sense that the ML of IL is regarded as a composite containing TL-based IL lexical structure with abstract elements from the L1.

If we regard SLA as a particular language-contact situation in which the intended ML is a *de facto* ML, we may assume that L1 abstract lexical structure can be split and recombined to build a developing target ML. However, the contribution of the L1 is rather constrained. As proposed in the BLA Model, and as observed in the phenomena of language transfer in L2 learning, only abstract lexical structure projected by lemmas underlying L1 content morphemes can contribute to the developing composite ML. If we regard the process of SLA as an IL continuum, we can predict that the restricted role of L1 in filling gaps in the abstract lexical structure underlying the developing IL system will result in some unfilled gaps in the intended ML.

The BLA Model reviews language transfer in L2 learning as lemma transfer from the bilingual mental lexicon at three levels of abstract lexical structure and predicts that as more and more TL lexical-conceptual structure, predicate-argument structure, and morphological realization patterns become available to learners, the successful projection of TL as each of these levels of abstract lexical structure will gradually replace those underlying the developing IL system and thus will make the *de facto* ML or the composite ML of IL more and more like that of the TL.

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